

## **REMARKS**

### **Summary**

Claims 1-5 are pending in the application and all of the claims were rejected in the present Office Action. Claim 2 has been amended. Claims 6-7 have been added. No new matter has been added as a result of this amendment. The Applicant has carefully considered the references and the reasons for rejection advanced by the Examiner, and respectfully traversed the rejections in view of the amendment and discussion presented below.

### **Interview Summary**

Applicants thank the Examiner for the personal interview on August 10, 2005 with Applicants' Agent Anthony P. Curtis, Ph.D. (Reg. 46,193). During the interview, Applicants' Agent and the Examiner discussed the differences between Claim 1 and the dependent claims and the cited art. The Examiner indicated that she required an amendment to Claim 2 for further clarification. Applicants have accordingly amended claim 2 as required.

### **Claim Rejections**

#### **Claims 1-2 and 5 under 35 U.S.C. §103**

Claim 1-2, and 5, were rejected under 35 U.S.C. §103(a) as being unpatentable over Nantz et al. (6,647,773) in view of Mendez et al (5,463,374), and Lin (6,259,362).

#### **Claim 1**

Claim 1 recites, inter alia, a tire air pressure abnormality warning device that comprises a vehicle-installed device which comprises a recording section for recording data of any abnormality in the air pressure of the tire, and a vehicle-installed device which searches for any abnormality data from the recording section when the vehicle-installed device communicates with the portable device.

The Applicant agrees that neither Nantz nor Lin discloses that a recording section for recording data of any abnormality in the air pressure of the tire.

The Examiner asserted that Mendez discloses that “the vehicle-installed device searches for any abnormality data from the recording section when the vehicle installed device communicates with the portable device, so that, when there is abnormality data, a tire air pressure abnormality signal is transmitted to the portable device” (see at least col. 4-5, lines 7-56). However, the Applicant respectfully disagrees with the Examiner’s assertions.

Mendez does not teach or suggest that the vehicle-installed device searches for any abnormality data when the vehicle installed device communicates with the portable device, as recited in claim 1.

Mendez states that “The message (RF message) format ... comprises a series of ones; a header one byte long for message byte forming and identifying the source as a tire sender or a keyless entry fob; ...” (see col.4 lines 52-55 and FIG-4). Therefore, in Mendez, the identification code of the RF message format is used for distinguishing between the RF messages of the tire sender and the keyless entry fob to determine the next process.

Further, Mendez states that “the main processor loop is shown by FIG.6. Beginning at a Main Start, it determines if a message (RF message) is detected<76>, and whether it is a tire pressure related message<78>. If it is, a routine is entered for processing tire pressure message<80>, otherwise a routine is entered for processing key less entry message<82>” (see col.5 lines 19-24 and FIG-6). Mendez teaches that the function of processing tire pressure message <80> is separated from that of processing key less entry message <82>, after the step of a RF message detected.

Thus, Mendez only teaches that after the vehicle-installed device detects either RF messages of the transmitter of the pressure sensor or the keyless entry device, the RF message proceeds to next either two independent processes; tire pressure message process<80> or remote keyless entry message process<82>. Therefore, in Mendez, when the vehicle-installed device communicates with the portable device, the vehicle-installed device does not search for any abnormality data of the tire pressure.

As described above, Mendez neither discloses nor suggests that the vehicle-installed device searches for any abnormality data from the recording section when the vehicle installed device communicates with the portable device, so that, when

there is abnormality data, a tire air pressure abnormality signal is transmitted to the portable device.

Therefore, not all of the elements of Claim 1 are taught by the combination of the references, nor has the Examiner set forth a reason that it would have been obvious to combine the references. Thus, a *prima facie* case of obviousness has not been made out. For at least these reasons, claim 1 is patentable.

### **Claim 2**

Claim 2 is dependent on claim 1 and is patentable for the same reasons that claim 1 is described as patentable above. However, Claim 2 is also independently patentable over the cited references.

Claim 2 recites that the communication between the vehicle-installed device and portable device is a passive keyless entry communication using a request signal from the vehicle-installed device to the portable device and an answer signal from the portable device to the vehicle-installed device. The tire air pressure abnormality signal is transmitted along with the request signal.

As indicated in the instant specification (page 11, lines 2-9 and 20-24), the portable device receives the request signal for the first time when the portable device comes within a range in which the request signal can be received, and, then, transmits an answer signal. The request signal includes a vehicle ID (as well as the tire air pressure abnormality signal), and the answer signal includes the portable device ID.

Nantz does not teach or suggest that a request signal from the vehicle-installed device to the portable device and an answer signal from the portable device to the vehicle-installed device, the tire air pressure abnormality signal is transmitted along with the request signal from the vehicle-installed device.

Instead, Nantz discloses that a user may obtain tire pressure information via display (42) on passive entry device (34), based on five steps described below (see at least col.6, lines 48-61 and FIG.1). In the first step, the user approaches the vehicle (12) with carrying the remote passive entry device (34). In the second step, the remote entry device (34) causes a vehicle door to be unlocked. In the third step, after the vehicle door has been unlocked, the tire pressure monitoring system starts

to operate; controller generates a control signal, which is then transmitted from transmitter (30) mounted on-board vehicle to transponders (20) in tire monitors. And then, in the forth step, tire pressure signals (22) are received by receiver (24) mounted on-board vehicle (12). Finally, such tire pressure information is then conveyed to a user via display (42) on passive entry device (34).

However, in these five steps in Nantz, it is only after the signal to unlock the door is sent from the portable device to the automobile that the tire pressure monitoring system starts to operate. That is, a signal is first sent to the portable device from the vehicle, the portable device responds, the vehicle reacts by opening the door, and then the vehicle starts the tire pressure monitoring system, which sends another signal to the portable device. This is entirely unlike the arrangement of claim 2 in which the tire air pressure abnormality signal is transmitted along with the request signal from the vehicle-installed device to the portable device.

Therefore, Nantz neither discloses nor suggests the component that the tire air pressure abnormality signal is transmitted along with the request signal. Therefore, not all of the elements of Claim 2 are taught by the combination of the references, nor has the Examiner set forth a reason that it would have been obvious to combine the references, and *prima facie* case of obviousness has not been made out. For at least these reasons, claim 2 is patentable.

#### **Claims 3-4 under 35 U.S.C. §103**

Claims 3-4 were rejected under 35 U.S.C. §103(a) as being unpatentable over Nantz, Mendez and Lin, as applied to claims 1-2 above, and further in view of Pacsai (6,438,467).

Claims 3 and 4 are dependent on claims 2 and 1, respectively, and are patentable for the same reasons as those provided above for claims 1 and 2. However, claims 3 and 4 are also independently patentable.

#### **Claim 3**

The Applicant agrees with the Examiner that Nantz, Mendez and Lin do not disclose the request signal and the tire pressure abnormality signal are transmitted by operating a door touch switch.

Pacsai does not teach or suggest that a door of the vehicle comprises a door touch switch or that by operating the door touch switch, the request signal and the

tire pressure abnormality signal are transmitted. Pacsai states that “the portable unit 44 (FIG. 5) includes two manually actuatable pushbutton switches 114 and 116” (see col. 4, lines 57-59). However, these pushbuttons 114 and 116 are not embedded on the door of the vehicle, but on the portable device.

Therefore, not all of the elements of Claim 3 are taught by the combination of the references, nor has the Examiner set forth a reason that it would have been obvious to combine the references, and *prima facie* case of obviousness has not been made out. For at least these reasons, claim 3 is patentable.

#### **Claim 4**

Claim 4 recites that the transmitter periodically measures the air pressure of the tire and transmits a measured value to the vehicle-installed device. However, Pacsai does not teach or suggest that when the vehicle-installed device determines that the air pressure of the tire is abnormal, the vehicle-installed device records abnormality data in the recording section, with a driver receiving the data from the recording section when the driver gets into or out of the vehicle.

Pacsai states that “the sensing portion 74 (of a sensor unit 22) senses pressure in a periodic, continuous fashion. ... Accordingly, when the determination portion 76 (of the sensor unit 22) determines that the change satisfies the predetermined threshold criteria, the transmitter portion 78 is enabled for a predetermined period of time to transmit the signal 30 indicative of current inflation pressure of the tire” (see col. 3-4, lines 53-1 and Fig.3). Thus, unlike the arrangement of claim 4, in Pacsai, it is the sensor unit in each tire rather than the vehicle-installed device that determines whether the air pressure of the tire is abnormal or not.

Therefore, not all of the elements of Claim 4 are taught by the combination of the references, nor has the Examiner set forth a reason that it would have been obvious to combine the references, and *prima facie* case of obviousness has not been made out. For at least these reasons, claim 4 is patentable.

#### **New Claims 6-7**

Applicant has added new claims 6-7.

Claim 6 recites that a tire air pressure abnormality warning device comprises a portable device which comprises a warning indicating section for indicating a

warning of an abnormal air pressure of the tire by a tire air pressure abnormality signal that the portable device has received. Additionally, claim 6 recites that communication between a vehicle-installed device and the portable device is a passive keyless entry communication using a request signal from the vehicle-installed device to the portable device and an answer signal from the portable device to the vehicle-installed device, and the tire air pressure abnormality signal is transmitted along with the request signal.

Claim 7 recites that a tire air pressure abnormality warning device comprises a portable device which comprises a warning indicating section for indicating a warning of an abnormal air pressure of the tire by the tire air pressure abnormality signal, and the portable device receives the abnormality signal before the door lock is driven.

None of the references cited by the Examiner, alone or in combination, discloses or suggests the arrangements recited in Claims 6-7. For at least these reasons, none of the references cited by the Examiner, alone or in combination, anticipates or suggests the arrangement of independent new claims 6-7.

## **Conclusion**

In view of the amendments and arguments above, Applicant respectfully submits that the pending claims are in condition for allowance and seek an early allowance thereof. If for any reason the Examiner is unable to allow the application in the next Office Action and believes that a telephone interview would be helpful to resolve any remaining issues, he is respectfully requested to contact the undersigned attorney.

Respectfully submitted,



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